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United States Patent [19]

Irvin

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[45] **Date of Patent: Jan. 7, 1997**

[54] **DEVICE FOR BANDING BRANCHES OF A PALM TREE**

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[21] Appl. No.: **572,699**

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[51] **Int. Cl.**[6] **B65B 13/00**

[52] **U.S. Cl.** **100/1**; 47/1.01; 53/390; 53/530; 53/585; 100/9; 100/233

[58] **Field of Search** ..... 100/1, 9, 41, 212, 100/233, 236, 296; 47/1.01, 1 M, 1 B; 53/390, 530, 585

[56] **References Cited**

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72979	8/1916	Switzerland	100/1
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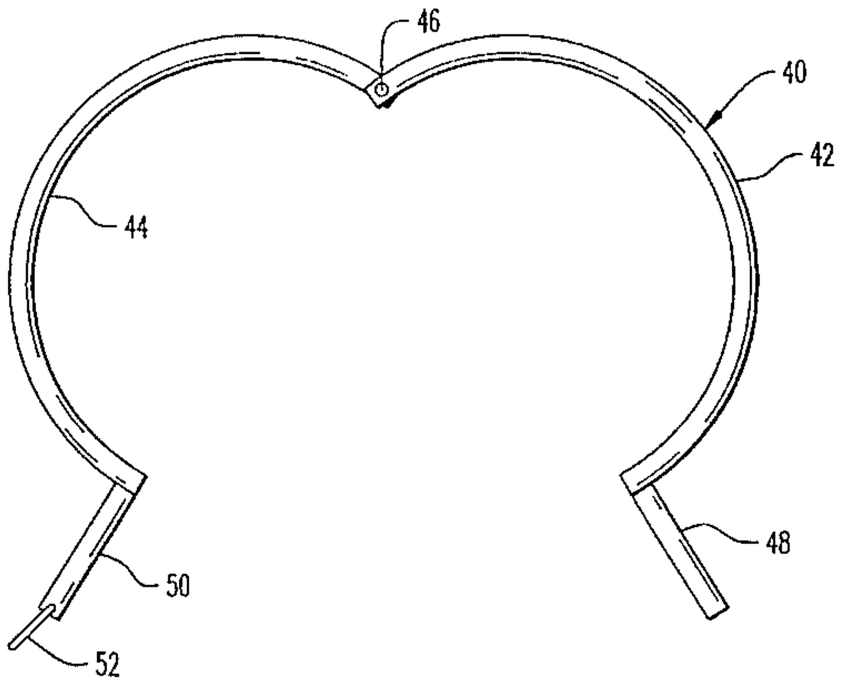
Primary Examiner—Stephen F. Gerrity
Attorney, Agent, or Firm—Charles J. Prescott

[57] **ABSTRACT**

A device for temporarily compressing or bending branches of a palm tree into a gathered position wherein the branches extend lengthwise upwardly from the trunk of the palm tree and for holding the branches in the gathered position during relocation and planting of the palm tree. The device has several embodiments, all of which include handles for grasping and forcibly urging the trunk encircling member, when closed around the trunk just below the branches, upwardly to inwardly deflect and temporarily hold the branches in the gathered configuration.

12 Claims, 4 Drawing Sheets



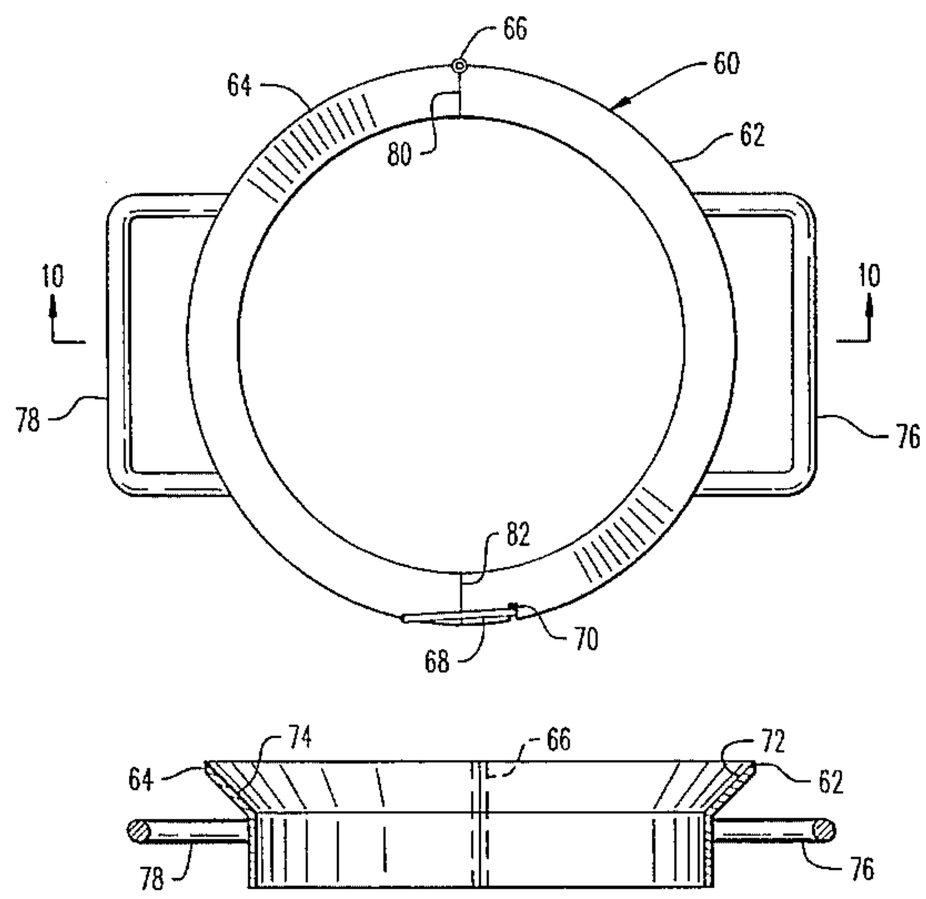


FIG. 1

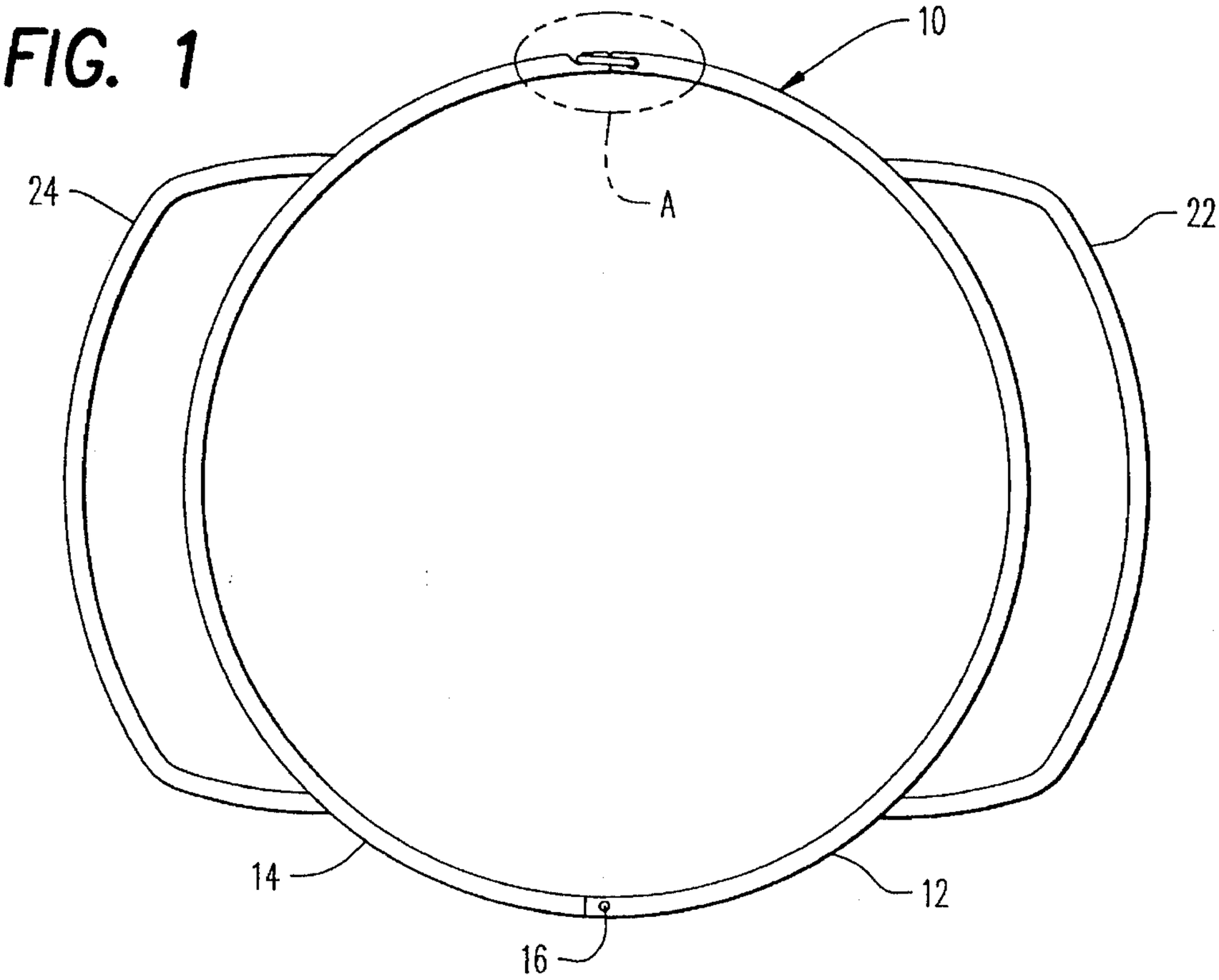


FIG. 2

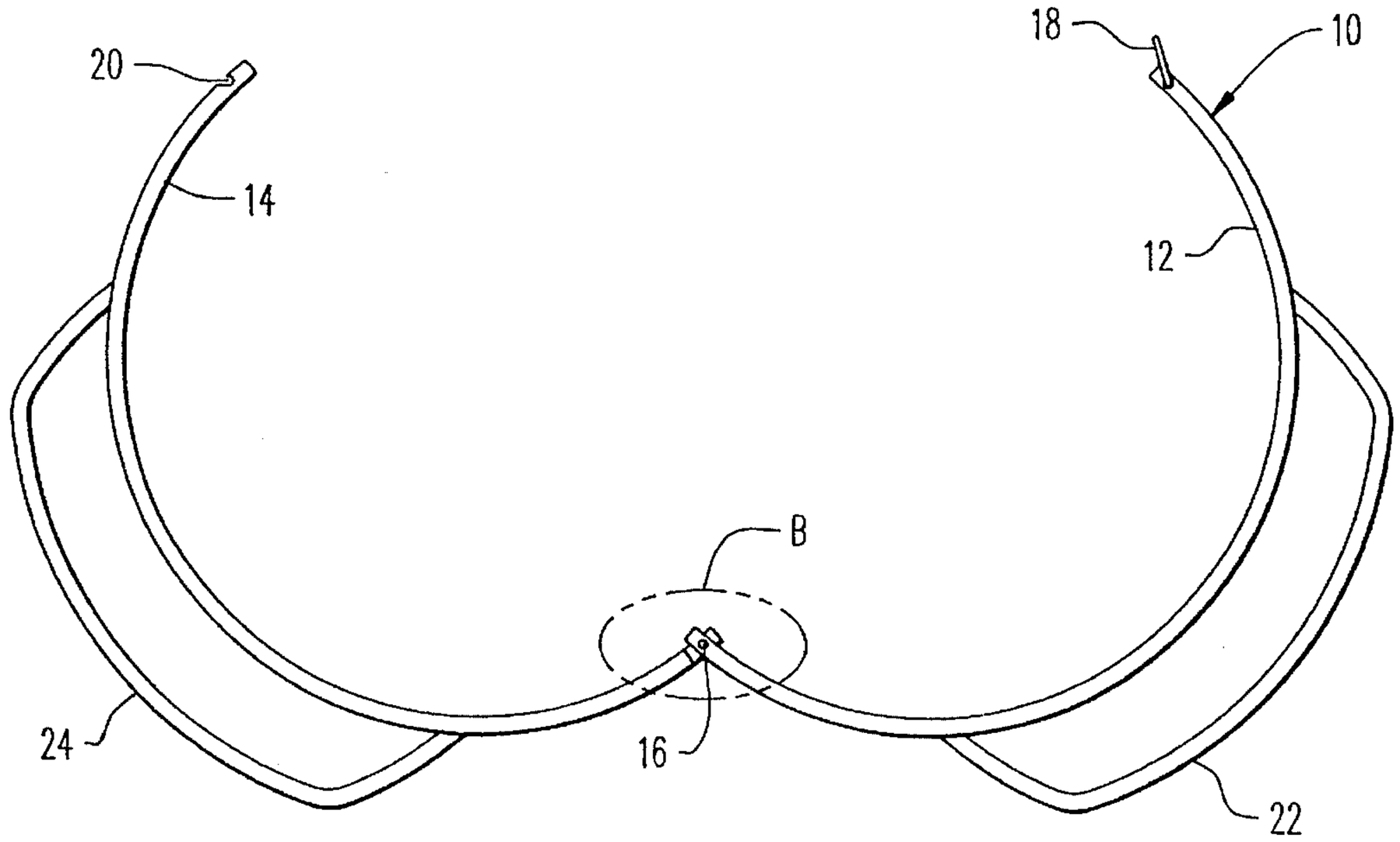


FIG. 3

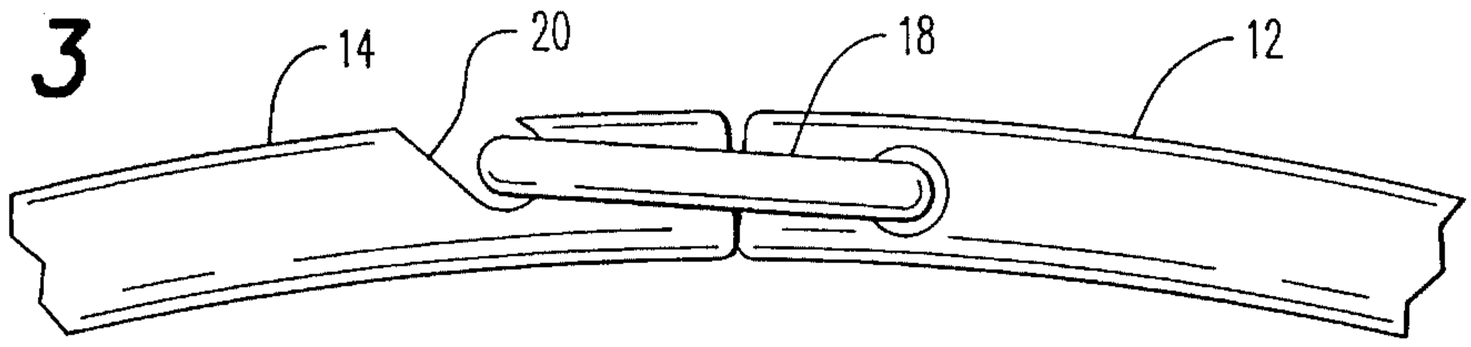


FIG. 4

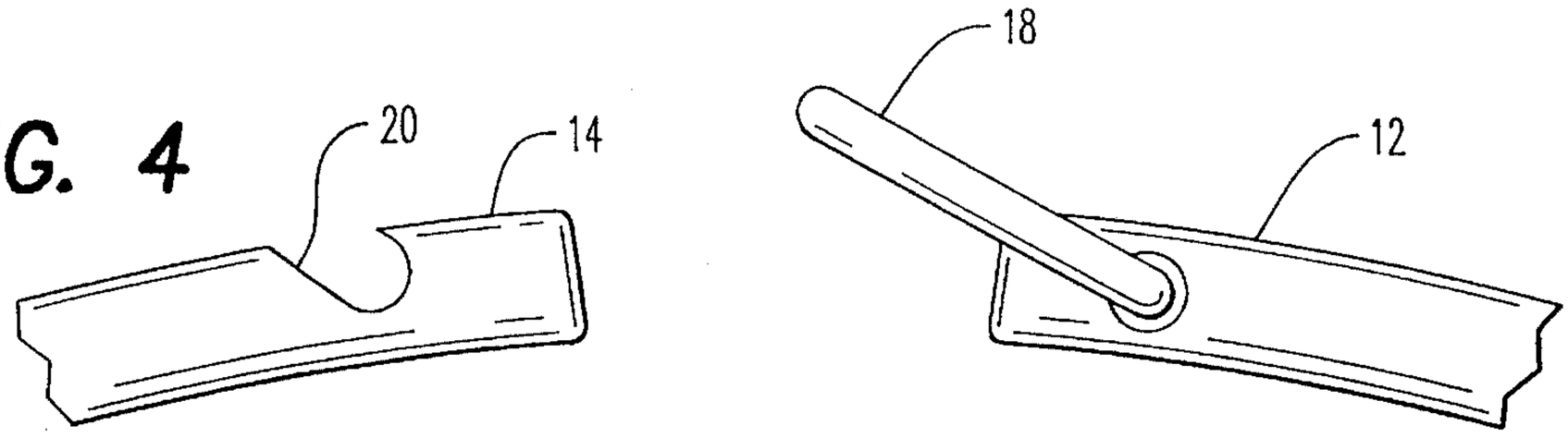


FIG. 5

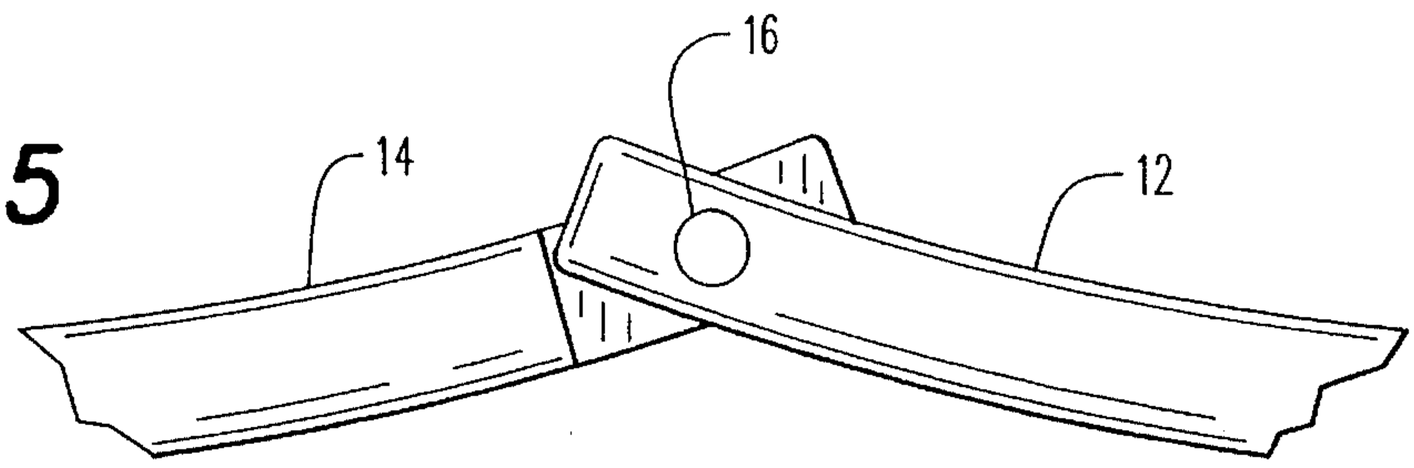


FIG. 6

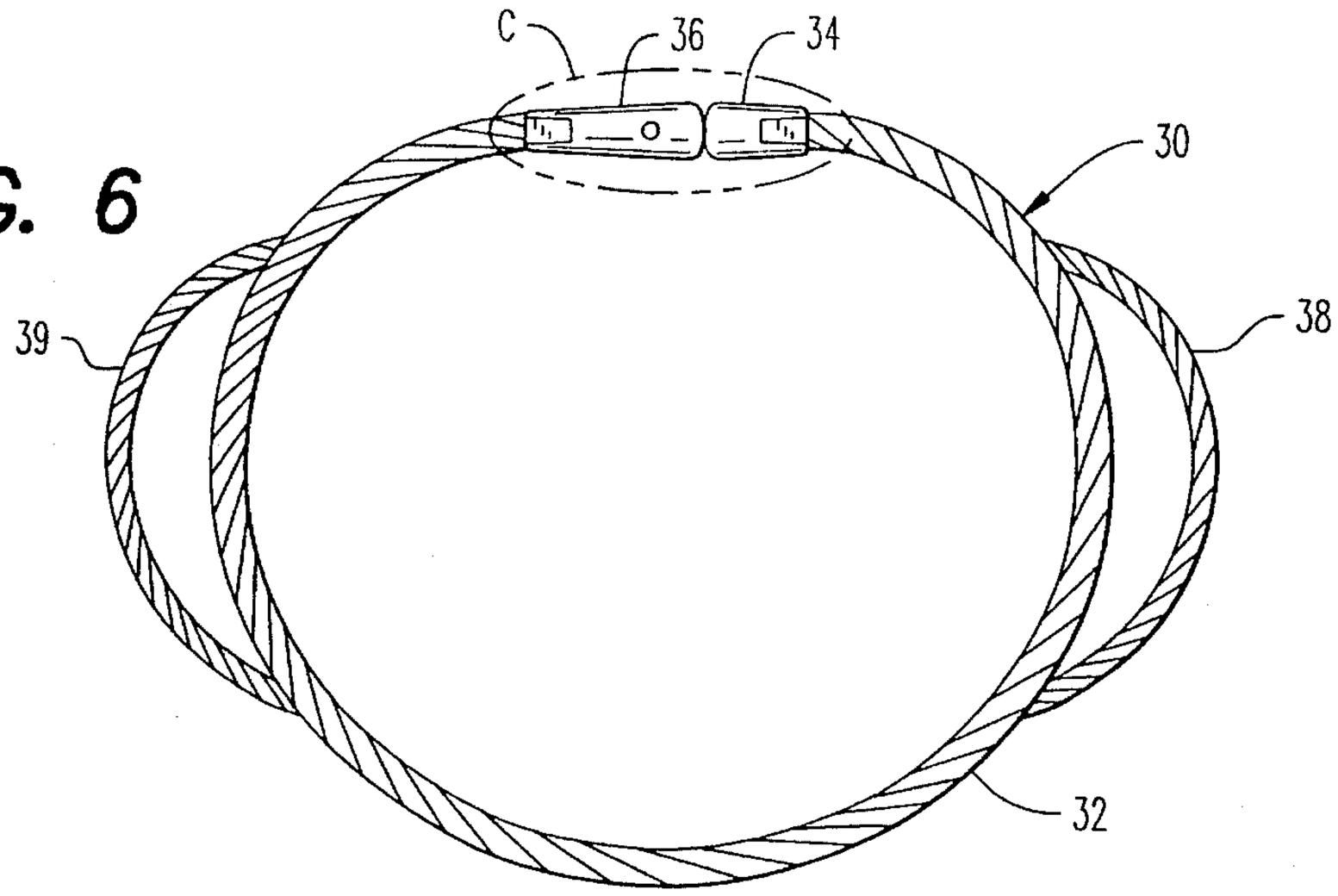


FIG. 7

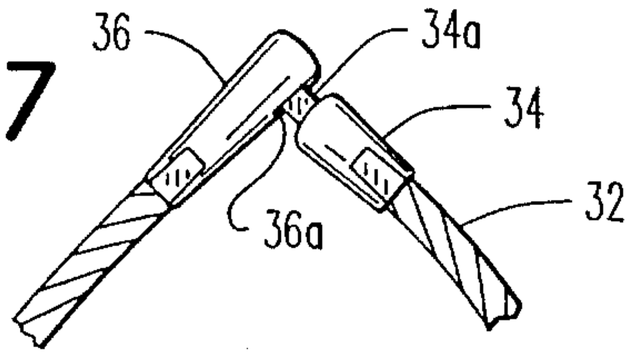


FIG. 8

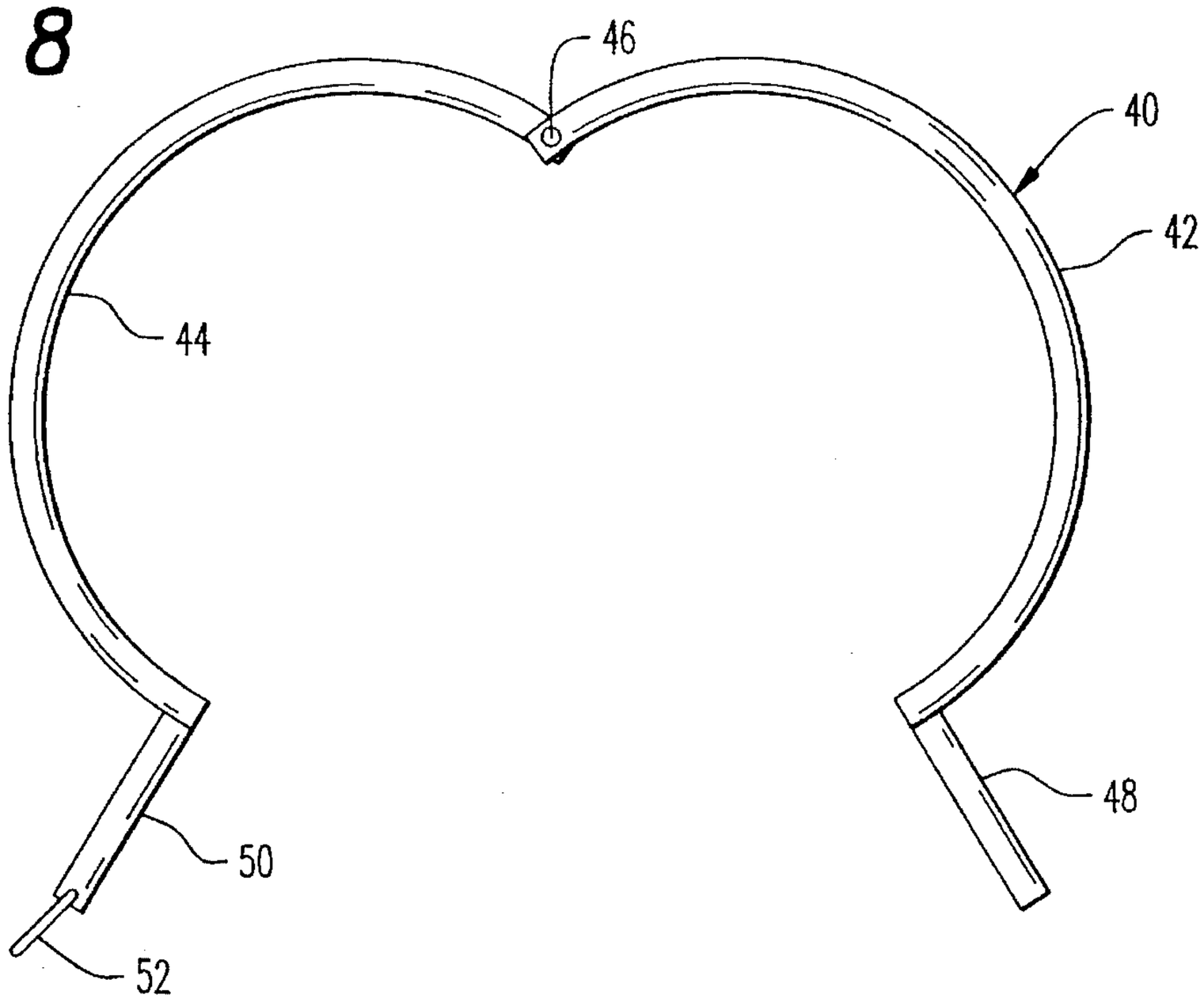


FIG. 9

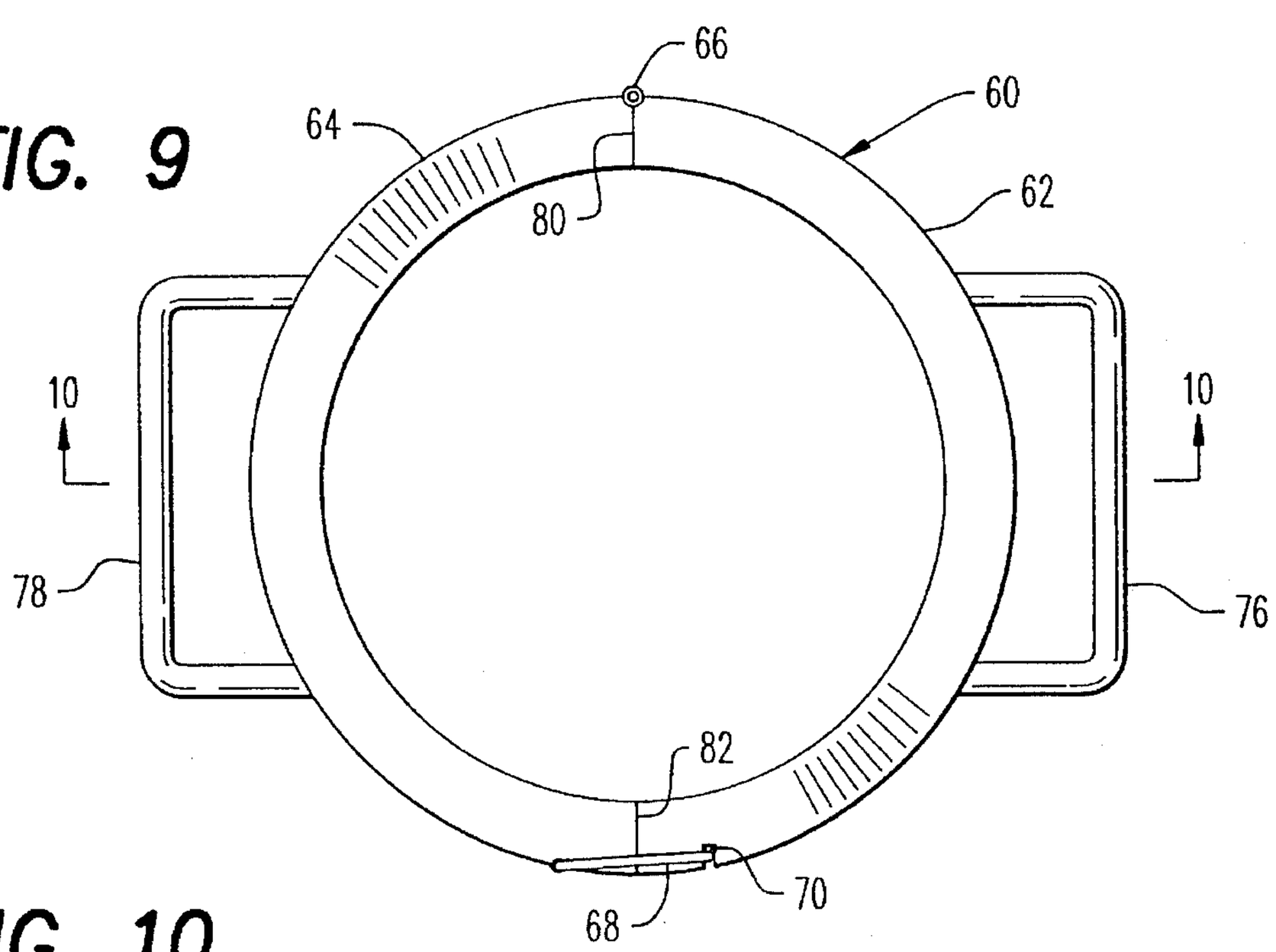
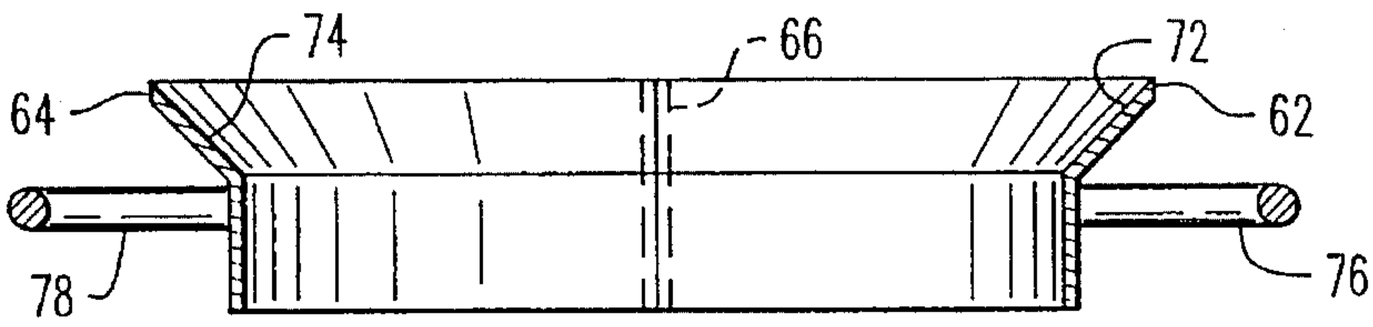


FIG. 10



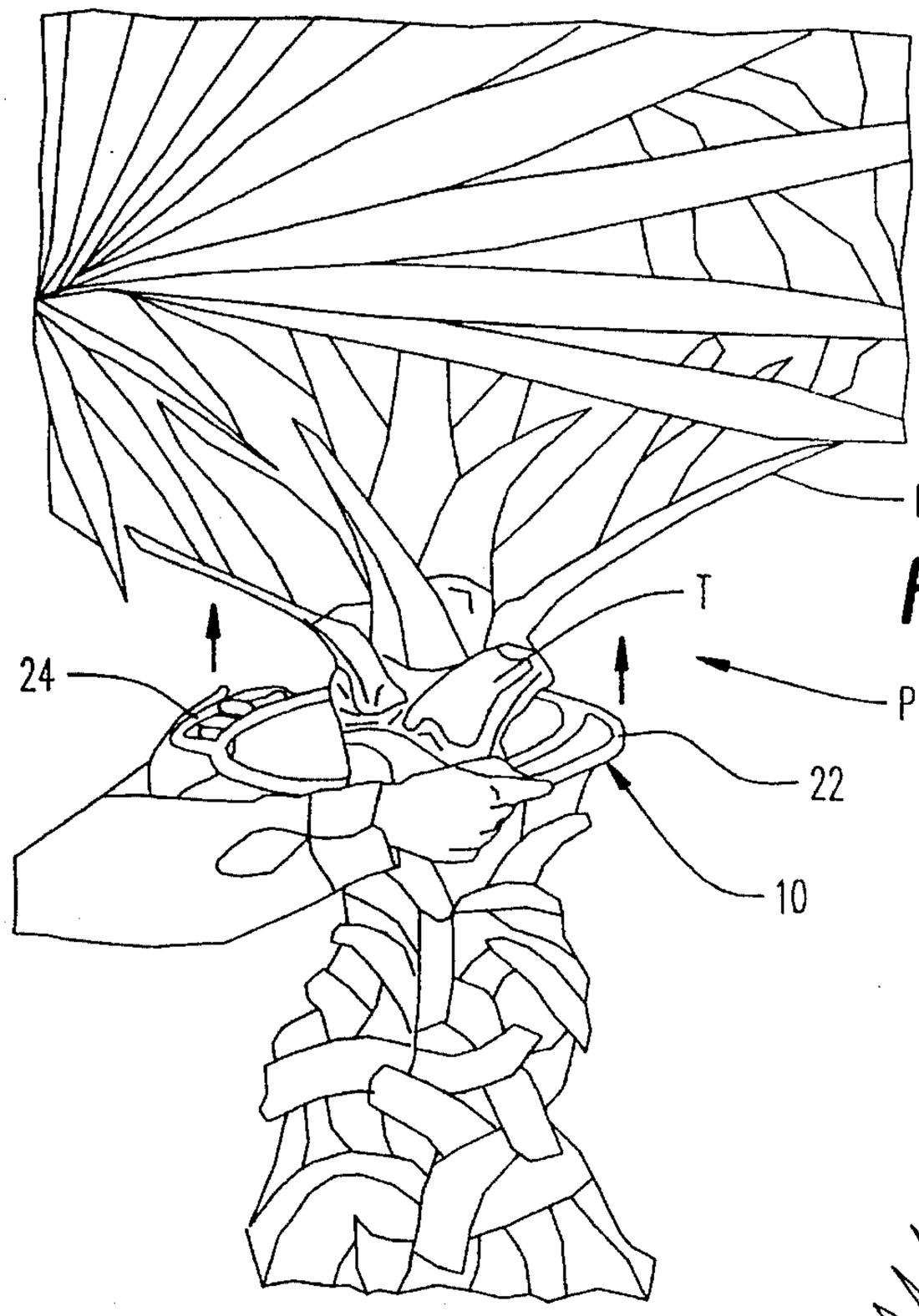


FIG. 11

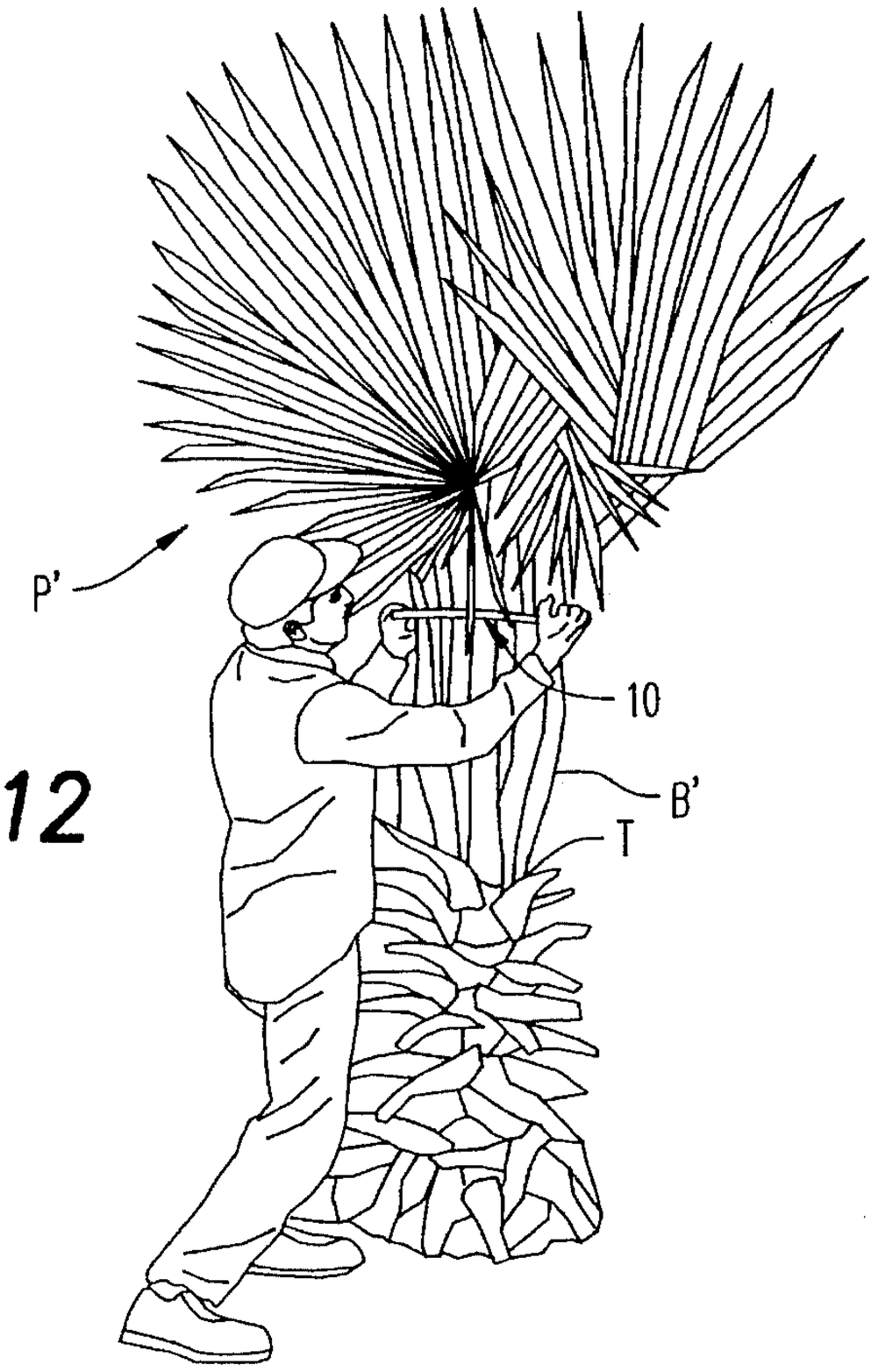


FIG. 12

DEVICE FOR BANDING BRANCHES OF A PALM TREE

BACKGROUND OF THE INVENTION

1. Scope of Invention

This invention relates generally to the transplanting of trees, and more particularly to the temporary compacting of branches of a palm trees during relocation and transplanting.

2. Prior Art

Trees generally referred to as palm trees have strong, relatively stiff branches which extend diagonally upwardly and outwardly from the upper portion of the trunk of the palm tree. Although these branches are quite strong and have sharp prominences laterally extending from the length of each branch which may inflict wounds into the hands of a worker manually handling and manipulating the palm tree, nonetheless the branches are bendable upwardly without damaging them.

It is well known to manually bend the branches of the palm tree upwardly into a compacted position wherein they extend generally lengthwise upwardly from the trunk, thus substantially reducing the overall diameter of the palm tree during its uprooting, transporting and replanting such as from a nursery setting into an end-user's yard or grounds area.

To maintain the bent or inwardly deflected branches in that position temporarily during transplanting, a length of twine or the like is typically wrapped around the branches after they have been so bent manually. This is a difficult procedure at best when done by hand, easily leading to the branches inflicting wounds into the face, hands and upper torso of the worker during this procedure.

One apparatus somewhat similar to that of the present invention is disclosed in U.S. Pat. No. 3,747,293 invented by VanSlooten, et al. which teaches a reusable split ring openable and positionable around the base of a live shrub or tree. A reusable flexible tubular wrap is secured to the ring and downwardly extends therefrom as the ring is hoisted upwardly by pulley so as to position the wrap around the slightly compacted branches of the shrub or tree. Thereafter, one of a plurality of stored packaging sleeves are pulled downwardly from a dispenser and over the wrapped shrub, after which the wrap is pulled upwardly by the split ring and removed for reuse.

Other patented devices and apparatus even more dissimilar with respect to the present invention are disclosed in the following U.S. patents.

221,972	Murray
572,133	Stephens
3,001,345	Zeller
3,380,220	Jennings, et al.
3,455,084	Broersma, et al.
3,662,490	Childs
4,939,989	Zacharias

The present invention provides a split ring positionable around the trunk of a palm tree immediately below the lowest branches of the palm tree. Opposing handles are then manually gripable to forcibly urge the closed split ring upwardly against the branches, bending and deflecting them into a generally compacted lengthwise orientation upwardly extending from the palm tree trunk. The split ring is then left in this position during uprooting, transporting and replanting of the palm tree, after which it is removed for reuse. No other devices are required for this procedure utilizing the present invention.

BRIEF SUMMARY OF THE INVENTION

This invention is directed to a device for temporarily compressing or bending branches of a palm tree into a gathered position wherein the branches extend lengthwise upwardly from the trunk of the palm tree and for holding the branches in the gathered position during relocation and planting of the palm tree. The device has several embodiments, all of which include handle means for grasping and forcibly urging the trunk encircling member, when closed around the trunk just below the branches, upwardly to inwardly deflect and temporarily hold the branches in the gathered configuration.

It is therefore an object of this invention to provide a device for temporarily compacting the branches of a palm tree and securing the branches in a lengthwise position with the palm tree trunk during transplanting of the palm tree.

It is yet another object of this invention to more easily and effectively compress the branches of a palm tree into a lengthwise orientation with respect to the palm tree.

It is still another object of this invention to provide a reusable split ring for compressing and holding the branches of a palm tree into a compacted lengthwise orientation for handling ease and protection for the branches during transplanting of the palm tree.

In accordance with these and other objects which will become apparent hereinafter, the instant invention will now be described with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a plan view of the preferred embodiment **10** of the invention in a closed position.

FIG. **2** is a plan view of the invention shown in FIG. **1** in an open position.

FIG. **3** is an enlarged view of area A of FIG. **1**.

FIG. **4** is a view similar to FIG. **3** except that the mating ends of each split ring are the latch holding them together are disengaged one from another.

FIG. **5** is an enlarged view of area B of FIG. **2**.

FIG. **6** is a plan view of another embodiment **30** of the invention.

FIG. **7** is a view of area C of FIG. **6** showing the mating engaged ends of the flexible cable ring **32** in the process of being disengaged one from another.

FIG. **8** is a plan view of yet another embodiment **40** of the invention in an open position.

FIG. **9** is a plan view of still another embodiment **60** of the invention in a closed position.

FIG. **10** is a section view in the direction of arrows **10—10** in FIG. **9**.

FIG. **11** is a perspective view of the invention **10** shown in FIGS. **1** and **2** in a closed position around the upper end of the palm tree trunk.

FIG. **12** is a perspective view similar to FIG. **11** after the device **10** has been upwardly urged manually to compress the palm tree branches.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, and particularly to FIGS. **1**, to **5**, the preferred embodiment of the invention is shown

generally at numeral **10** and includes two split rings **12** and **14** made of rigid solid steel rods each formed into the same semi-circular shape shown. The ring halves **12** and **14** are pivotally connected at **16** and are thus movable from the closed position shown in FIG. **1** to an open position shown in FIG. **2**. To maintain the closed position, a wire latch **18** pivotally connected to the free end of ring half **12** mateably engages into an angled slot **20** formed adjacent the free end of ring half **14** as best seen in FIGS. **3** and **4**.

Opposing handles **22** and **24**, outwardly extending from each ring half **12** and **14**, respectively, are also formed of rigid steel solid rod stock and are sized for manual grasping of the device **10** during its use.

As seen in FIGS. **11** and **12**, the device **10** is positionable around the upper end of a trunk T of the palm tree P immediately below the normally outwardly extended branches B. After the latch **18** is secured in a closed position as shown in FIG. **3**, the opposing handles **22** and **24** are manually grasped and the closed device **10** is forcibly urged upward in the direction of the arrows in FIG. **11**. The branches B are bendably urged together into a lengthwise bundle as shown in FIG. **12**. In this configuration, the branches B' in FIG. **12** of the palm tree P' are substantially smaller in overall diameter and circumference, during which configuration the device **10** would be left in the position shown in FIG. **12** for transplanting of the palm tree as desired. By substantially compacting the branches B', they are also much less vulnerable to damage.

By the arrangement of opposing handles **22** and **24** of device **10**, the hands of the worker are kept away from the hurtful edges of the branches B as the device **10** is forcibly urged upward to resiliently compact the branches. Again, the device **10** may either be left in the position shown in FIG. **12**, or alternately, a length of wrapping material shown in FIG. **12** being held by the worker may be wrapped around the bent and compacted branches B', thus allowing the device **10** to be removed before transplanting of the palm tree P'.

Referring now to FIGS. **6** and **7**, another embodiment of the invention is there shown at numeral **30**, the ring **32** fabricated of a single length of semi-flexible steel cable. Interengaging members **34** and **36** secured at each end of the cable **32** and of a well-known interengagement structure as seen in FIG. **7** facilitate the opening and closing of the device **30** in a sequence previously described around the upper end of the trunk T of the palm tree P. Shaft **34***a* of interengaging member **34** includes a spherical enlarged distal end (not shown) which lockingly engages into a formed slot **36***a* of locking member **36**. The device **30** also includes opposing handles **38** and **39** fabricated of semi-flexible steel cable material.

Still another embodiment of the invention is shown in FIG. **8** generally at numeral **40** and includes two rigid split ring halves **42** and **44** formed of rigid rod stock, pivotally connected end to end at **46** so that the ring halves **42** and **44** may be pivotally moved between the open position shown and a closed configuration (not shown) wherein handles **48** and **50** are positioned adjacent one another and latch member **52** secures this closed arrangement.

Still another embodiment of the invention is shown generally at **60** in FIGS. **9** and **10**. This embodiment **60** includes two split ring halves **62** and **64** formed of rigid material pivotally connected at **66**. When the device **10** is in a closed configuration shown in FIG. **9** and secured in that position by latch **68** acting in slot **70**, the ring halves **62** and **64** abutting one another at **80** and **82**, define a continuous

circular cylindrical lower portion **84** and a generally conical upper portion **86**. Opposing lifting handles **76** and **78** are formed of rigid steel rod as shown.

While the instant invention has been shown and described herein in what are conceived to be the most practical and preferred embodiments, it is recognized that departures may be made therefrom within the scope of the invention, which is therefore not to be limited to the details disclosed herein, but is to be afforded the full scope of the claims so as to embrace any and all equivalent apparatus and articles.

What is claimed is:

1. A device for temporarily inwardly compressing and banding branches of a palm tree comprising:

a split ring sized in circumference to be fitted around a trunk of the palm tree just below the branches;

means for securing said ring in a closed position when so fitted around the trunk;

handle means connected and extending outwardly from said ring for grasping and manually forcibly urging said ring, when closed, upwardly to resiliently bend and gather the branches together in a bundle generally lengthwise to the trunk wherein the branches are temporarily secured by said ring during relocation of the palm tree.

2. A device for banding branches of a palm tree as set forth in claim **1**, wherein:

said split ring is formed of two generally semi-circular thin rigid members pivotally connected end to end.

3. A device for banding branches of a palm tree as set forth in claim **2**, wherein:

said split ring includes a conically shaped outwardly extending flange for smooth engagement against the branches as said device is upwardly urged.

4. A device for banding branches of a palm tree as set forth in claim **1**, wherein:

said split ring and said handle means are each formed from a single length of somewhat flexible cable.

5. A device for temporarily inwardly bending and holding branches of a palm tree during transporting and planting of the palm tree comprising:

means defining an openable ring when in a closed position sized for closely encircling a trunk of a palm tree just below the branches;

means for opening said ring defining means for trunk encircling positioning and means for securing said ring defining means in a closed position thereafter;

handle means connected and outwardly extending in opposing directions from said ring defining means for hand grasping and forcibly urging said ring defining means upwardly from the trunk to resiliently bend and gather the branches together in a bundle wherein the branches are temporarily secured in a compacted bundle generally lengthwise to the trunk during transporting and planting of the palm tree.

6. A device for banding branches of a palm tree as set forth in claim **5**, wherein:

said ring defining means is a split ring formed of two generally semi-circular, thin rigid members of uniform circular cross section pivotally connected end to end.

7. A device for banding branches of a palm tree as set forth in claim **6**, wherein:

said split ring includes a conically shaped outwardly extending flange for smooth engagement against the branches as said device is upwardly urged.

8. A device for banding branches of a palm tree as set forth in claim **5**, wherein:

said ring defining means is formed from a single length of somewhat flexible cable.

9. A device for temporarily bending otherwise outwardly extending branches of a palm tree into a gathered position extending generally lengthwise to a trunk of the palm tree consisting of:

a split ring sized in circumference to be fitted around a trunk of the palm tree just below the branches;

means for securing said ring in a closed position when fitted around the trunk;

handle means connected and extending outwardly from said ring for grasping and manually forcibly urging said ring, when closed, upwardly to resiliently bend and gather the branches together in a bundle generally lengthwise to the trunk wherein the branches are temporarily secured by said ring during relocation of the palm tree.

10. A device for banding branches of a palm tree as set forth in claim **9**, wherein:

said split ring is formed of two generally semi-circular thin rigid members pivotally connected end to end.

11. A device for banding branches of a palm tree as set forth in claim **10**, wherein:

said split ring includes a conically shaped outwardly extending flange for smooth engagement against the branches as said device is upwardly urged.

12. A device for banding branches of a palm tree as set forth in claim **9**, wherein:

said split ring and said handle means are each formed from a single length of somewhat flexible cable.

* * * * *